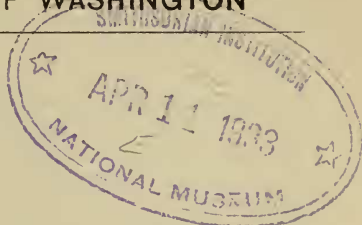


PROCEEDINGS  
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A NEW RACE OF *AIMOPHILA CARPALIS* FROM  
MEXICO.

BY ROBERT T. MOORE.

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The securing of four specimens of *Aimophila carpalis* (Coues) in Arizona by the author in June, 1932, induced a comparison with thirty-six specimens of this species in the Dickey collection at the California Institute of Technology. This led to the assembling of approximately ninety-four specimens, including the type of *Aimophila carpalis* and twelve other specimens from approximately the same locality near Tucson in Arizona. The birds from the Alamos Faunal Area of southern Sonora seem distinct and are herewith separated. My thanks are gratefully offered to Dr. Alexander Wetmore of the Smithsonian Institution for his courtesy in loaning the type specimen of *Aimophila carpalis* and other topotypical material; to Dr. Harry C. Oberholser of the Bureau of Biological Survey, and to Dr. Wilfred H. Osgood of the Field Museum of Natural History, for their kindness in forwarding supplementary material for comparison.

It seems fitting to name this race for the late Outram Bangs, as a slight tribute to the years of work he devoted to the study of Mexican birds. Throughout his life he was noted for his kindly nature and sympathetic understanding of the problems of other ornithologists. It was characteristic of him, that only a short time before his death, he displayed once more his generosity by forwarding the larger part of the material loaned, forty specimens, including a large series from the Alamos Faunal Area near the type locality of the proposed new race. I make this dedication with a peculiar feeling of respect for a truly great and beloved ornithologist.

***Aimophila carpalis bangsi*, subsp. nov.**

SONORA RUFOUS-WINGED SPARROW.

*Type*.—Male adult; no. 31,012, collection of Donald R. Dickey; Guirocoba, Sonora, Mexico; May 23, 1930; collected by J. T. Wright; original no. 5762.

*Subspecific characters*.—Nearest to *Aimophila carpalis* (Coues), but size smaller; in particular bill shallower; legs and feet more slender and smaller; wing more rounded; mandible and tarsi lighter in color in dried skins at least. Females are similar to males, but average smaller in all measurements.

*Geographical distribution*.—Southern Sonora, from Obregon to Tesia, Chinobampo, Guirocoba, and probably to contiguous portions of the same faunal area in Chihuahua and Sinaloa, north to approximately Tecoripa, San Javier and Oposura. Birds from these last named localities are more or less intermediate between this new race and *carpalis*. Birds from the Guaymas area are only slightly larger and grayer on the upper parts and apparently should be referred to *bangsi*.

*Description of type*.—Adult male with newly moulted breeding plumage nearly completed. Pileum streaked broadly with bay<sup>1</sup> and narrowly with pale olive-gray, the latter forming an indistinct median line; a rather broad superciliary stripe and sides of head pale smoke gray, the latter crossed by a narrow post-ocular streak of bay; loreal streak blackish brown mixed with bay; malar streak mixed natal brown and black; narrow submalar streak blackish brown; at a point beneath posterior margin of eye-ring, malar streak is concealed by gray tips, but continues in concealed semilunar black line about base of ear opening; upperparts, including upper tail-coverts, drab, the back and scapulars streaked with clove brown, the streaks bordered by natal brown; inner vane of outer rectrices hair brown, outer vane margined with grayish white, tipped obliquely with same; next pair of rectrices fuscous, narrowly margined on both sides and tipped with grayish white; remaining rectrices, except median pair, fuscous narrowly margined by pale olive-buff; partially developed median rectrices fuscous-black margined on both vanes narrowly by pale olive-buff; remiges fuscous margined on outer vane with white; freshly moulted secondaries and tertials fuscous-black margined by cinnamon drab; older secondaries fuscous; lesser wing coverts russet; chin and throat pure white; breast light mouse gray; abdomen whiter; flanks mouse gray tinged with drab; under tail-coverts olive-buff; in dried specimens legs chamois; maxilla fuscous, base black; mandible (viewed from below) cream buff, tip fuscous.

The new race differs from typical *Aimophila carpalis* in its smaller size in all measurements, markedly in its more shallow bill, shorter and more slender tarsus and smaller feet; in its lighter colored mandible (ivory yellow to cream buff), lighter colored tarsus and feet (cinnamon buff to chamois). Perhaps the most noteworthy difference between the two races is the decrease in the average difference between the length of the longest primary

<sup>1</sup>Names of colors in paper taken from Ridgway, *Color Standards and Color Nomenclature*, 1912.

and the length of the longest secondary. In this measurement different degrees of development of individual feathers have been given due consideration. This difference averages fifty per cent smaller in *bangsi* and creates a more rounded wing. In three of the measurements given, the maximum of the males of *bangsi* does not reach the minimum of the males of *carpalis*. In making the statement that the mandible, tarsi, and feet are lighter colored, I am quite aware that allied species in both *Aimophila* and *Spizella* exhibit marked changes in color of these parts at different periods of the year and in different stages of moult. In addition another factor may have been created by the unusual material employed by Frazar in preparing certain specimens which were collected in Sonora. Nevertheless the change of color, which has taken place in many of the species he collected, does not seem to be obvious in this series. All these various factors have been carefully weighed. There are some fresh specimens of both *carpalis* and *bangsi* in the same stage of moult to indicate that birds of the two races reveal the color differences mentioned. Females of the new race exhibit all the differences shown by the males in comparison with true *carpalis*, including smaller size, lighter color of bill and legs. Although the percentage of decrease in most of the measurements is not so large as in the comparison between the males, nevertheless it is less in every measurement. It is interesting to note that the females of true *carpalis* are not only larger than the females of *bangsi*, but average larger in every measurement except two than even the males of *bangsi*.

In the preparation of this paper three juveniles and ninety-one adults have been examined and measured. Of these forty-two are ascribed to *bangsi* and twenty-one may be referred to *carpalis* of Arizona and northern Sonora. Twenty-eight specimens are classed as intermediates, coming mostly from Tecoripa, San Javier, and Oposura. In the table of measurements, I have eliminated juveniles and specimens that are badly damaged.

On account of the separation of the new race, it will now be necessary to change *Aimophila carpalis* (Coues) to *Aimophila carpalis carpalis* (Coues). More material from extreme northern Sonora is desirable before attempting to determine the southern boundary of the range of this form. Three males from Saric in extreme northern Sonora, averaging somewhat smaller, are assigned to true *carpalis*. The securing of the three males and one female from Fresnal, Arizona, by the author, would seem to extend the range westward as far as the western base of the Baboquivari Range of mountains. However, these specimens exhibit certain differences of color, and come from this western base, which seems to be the boundary line between the Eastern Plains and Colorado Desert Faunal Areas. The exact boundary has not yet been satisfactorily determined. For the purpose of obtaining more light on the problem, Mr. A. J. van Rossem and the author did some collecting at various points in southern Arizona during June and July, 1932. The results of Mr. van Rossem's study of the material point to the conclusion that hitherto this boundary has been located too far to the east and make it necessary to use instead the western base of the Baboquivari Mountains.

TABLE OF MEASUREMENTS OF *Aimophila carpalis*.

AVERAGE MEASUREMENTS.											
	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Diam. mid of tarsus	Mid. toe minus claw	Post. toe minus claw	Longest primary from base	Longest secondary from base	Aver. diff. bet. pr. and sec.
<i>Males.</i>											
12 adults from Arizona and northern Sonora ( <i>carpalis</i> ).....	62.98	63.24	10.30	7.2	19.5	2.24	13.40	6.91	49.43	44.08	5.35
32 adults from southern Sonora ( <i>bangsi</i> ).....	58.10	57.77	9.85	6.66	17.85	1.99	12.65	6.21	44.83	42.18	2.69
<i>Females</i>											
9 adults from Arizona ( <i>carpalis</i> ).....	59.66	61.81	9.81	6.99	18.58	2.03	12.88	6.58	45.29	43.03	2.26
10 adults from southern Sonora ( <i>bangsi</i> ).....	56.84	56.72	9.52	6.61	17.78	1.94	12.16	5.78	43.36	42.56	.55
EXTREMES OF MEASUREMENTS.											
<i>Males</i>											
12 adults from Arizona and northern Sonora ( <i>carpalis</i> ).....	{ 61.4— 64.2	{ 61.5— 65.6	{ 9.8— 10.6	{ 7.3— 7.6	{ 18.9— 20.5	{ 2.0— 2.4	{ 12.7— 14.2	{ 6.75— 7.15	{ 47.1— 52.4	{ 41.9— 47.1	
32 adults from southern Sonora ( <i>bangsi</i> ).....	{ 55.3— 61.2	{ 52.1— 61.8	{ 8.9— 10.5	{ 6.4— 6.8	{ 16.4— 18.9	{ 1.85— 2.17	{ 11.9— 13.3	{ 5.40— 6.95	{ 41.95— 47.9	{ 39.4— 45.0	
<i>Females</i>											
9 adults from Arizona ( <i>carpalis</i> ).....	{ 57.1— 61.5	{ 59.85— 64.2	{ 9.2— 10.5	{ 6.5— 7.65	{ 18.1— 19.55	{ 1.85— 2.2	{ 11.8— 13.75	{ 6.1— 7.3	{ 43.7— 46.65	{ 41.0— 44.6	
10 adults from southern Sonora ( <i>bangsi</i> ).....	{ 55.7— 58.1	{ 54.1— 60.9	{ 9.0— 10.4	{ 6.35— 7.00	{ 17.05— 19.0	{ 1.7— 2.05	{ 11.5— 12.7	{ 5.45— 6.4	{ 41.7— 45.5	{ 41.3— 44.2	